

An Elixir for Development? Olive Oil Policies and Poverty Alleviation in the Middle East and North Africa

Travis J. Lybbert and Ghada Elabed*

The evolution of olive oil markets has sparked interest in policies that promote olive oil as a means of inducing rural development across the Middle East and North Africa. This article describes policies that link olive oil markets to rural development in Morocco, Syria and Tunisia and evaluate their effectiveness. It uses a framework that combines producer heterogeneity and market differentiation to describe how rural poverty impacts will be shaped by production, quality and marketing constraints. While the flow of olive oil from producers to the market may have increased, that of information and incentives in the reverse direction is still limited, something that too few olive oil policies aim to improve.

Key words: Olive oil, poverty, rural development, Morocco, Syria, Tunisia

1 Introduction

Recent decades have brought dramatic changes in international olive oil markets. The Mediterranean diet has spread to health-conscious consumers worldwide, which has broadened olive oil markets and kindled the emergence of high-value markets for extra virgin olive oil, including niche markets for high-quality oil from specific locations with unique flavour profiles. People who had no interest in or familiarity with olive oil a decade ago are becoming avid connoisseurs.

The evolution of olive oil markets has sparked interest in policies that promote olive oil as a promising vector of rural development and poverty reduction. These policies are especially evident across the Middle East and North Africa (MENA) region, which has rich cultivation and culinary traditions in olive oil and continues to wrestle with difficult rural poverty issues. Olive oil promotion is increasingly touted as a way to harness these traditions in order to alleviate poverty. These olive oil policies reflect a general popularity of ‘market-based’ solutions to rural poverty – including institutional and marketing innovations such as fair trade, organic certification, protected designations of origin, and Geographic Indications – and pressing concerns about water availability, soil preservation, desertification, and natural-resource management in the region. More broadly, the policies

*Respectively, Associate Professor and PhD candidate, Agricultural and Resource Economics, University of California, Davis and Giannini Foundation of Agricultural Economics (tlybbert@ucdavis.edu). They wish to thank Taoufik El Abed, Abdellah Aboudrare, Aziz Fadlaoui, Mufid Khaizaran, Feras Sweid, Bruce Golino, Samir Milli and those attending presentations of this research at ICARDA (Aleppo, Syria) and at OLIVEBIOTECH 2009 (Sfax, Tunisia) for helpful comments and suggestions.

are part of a general effort to reinvigorate rural and agricultural development by integrating local agriculture into markets for High-Value Agricultural Products.¹ The Arab Spring of 2011 demonstrated the need for such innovative and integrated development policies in the MENA region. This article describes how the evolving olive oil market has shaped rural development policies in Morocco, Syria and Tunisia – and evaluates how effectively these policies are likely to alleviate rural poverty.

Several trends explain the emerging focus on integrating smallholder agriculture into high-value supply chains. State marketing boards, which used to help small farmers to gain access to input and output markets as well as extension and training, have largely been dismantled following episodes of structural adjustment (Hellin et al., 2009). At the same time, income growth and urbanisation have increased global demand for high-value food products (Regmi and Gehlhar, 2005), which has induced major changes in agricultural supply chains through innovations in procurement and logistics involvement and through the widespread diffusion of supermarkets and modern agribusinesses in both developed and developing countries. The demands of these high-value agri-food chains may disadvantage small-scale producers (Cadilhon et al., 2006). Specifically, smallholders are often excluded from these markets by high transaction costs, difficulty in meeting higher food safety and quality standards, liquidity constraints and lack of information on production methods and markets. In this context, there are often opportunities for policy to help mitigate these factors and facilitate the integration of smallholder agriculture into high-value markets.

Co-operatives and farmer organisations can help farmers by reducing transaction costs, providing access to credit, inputs and information, and improving their bargaining power (Hellin et al., 2009; Markelova et al., 2009), but the history of co-operatives is riddled with failures (Shepherd, 2007). Contract farming can similarly help get smallholders into modern value chains by improving access to inputs, credit and extension, and by increasing technology adoption and smallholder productivity (Glover, 1987; Goldsmith, 1985). Although these contracts can raise concerns about exploitative contract terms and vulnerability to food shortages (Key and Runsten, 1999), recent research emphasises that contract farming – with the right incentives – can increase the welfare of small producers by stabilising income and by enabling the adoption of risky technologies (Minten et al., 2009). Lastly, some hope that legally protecting names of origin for food products may help link smallholder agriculture to high-value markets. This approach, which is actively promoted by the European Union, relies on trademarks, Geographic Indications (GIs) and Protected Designation of Origin to protect the geographic branding of products. While most of the assessments of impact of this differentiation on rural development have been set in developed countries (Gerz and Dupont, 2006; Tregear et al., 2007; Van de Kop et al., 2006), many argue that this approach could directly benefit smallholders in developing countries who produce products with distinctive geographic attributes, including coffee, tea and – some hope – olive oil. Little is known about the impacts of geographic branding on rural poverty in developing countries.

Building on this general background, we describe the evolution of international olive oil markets in the next Section. We then explore the olive oil policies of Morocco, Syria

1. High-Value Agricultural Products refer to ‘crop, fish, livestock or non-timber forest products that return a higher gross margin per unit of available resources (land, labour, capital, human capacity) than other products within a given location and context’ (GFAR, 2006).

and Tunisia, with a focus on recent policies that aim to use olive oil markets to help alleviate rural poverty. In Section 3, we provide a framework for evaluating the likely poverty impacts of these policies that takes account of two critical dimensions: producer heterogeneity and market differentiation. We then use this framework to describe how possible rural poverty impacts will be shaped importantly by production, quality and market-linkage constraints, as well as spillovers to the rural economy. Although recent olive oil policies have shifted their focus somewhat from increasing production to improving quality, they suffer from and do too little to remedy severe constraints on the flow of information and incentives from markets back to small and marginal producers. We conclude with five policy principles and insights that apply broadly to efforts to link smallholder agriculture to high-value agri-food markets.

2 The evolution of international olive oil markets

Analysis of the international olive oil market suggests two distinct recent phases; (i) balanced supply and demand expansion until the early 1990s, and (ii) excess supply despite continued demand expansion since then, plus a third emerging phase (iii) the promotion of high-value niche markets as an alternative to bulk oil routed through Spain and Italy. The first phase is characterised by a balance between the increased supply in the major producing countries and the increased demand due to the emergence of non-traditional markets in North America, Australia and Japan. The increased supply came from higher production among traditional producers in the Mediterranean region, with over 70% produced in three countries: Spain (30%), Italy (25%) and Greece (17%) (FAO, 2010). During this phase, world demand grew at an average annual rate of over 2% and absorbed 98% of olive oil stocks (Mili and Zuniga, 2001).

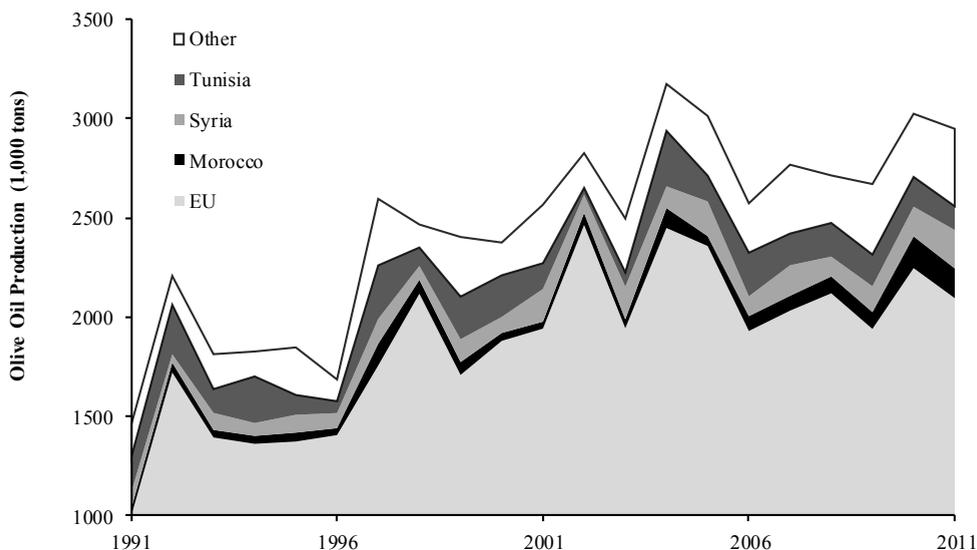
Starting in the mid-1990s, the balance of supply and demand in the olive oil market tipped in favour of excess supply. This was not because of weakening demand, which has actually grown at a faster annual pace of 5.3% since 1995, but owing to a dramatic expansion in production (Türkecul et al., 2007).² Global olive oil production throughout this second phase of the international olive oil market is depicted in Figure 1. Total production has nearly doubled in the past 20 years with traditional olive-producing areas maintaining or increasing production while new areas are dramatically expanding production.

Market differentiation has always distinguished olive oil from other edible oils and is becoming increasingly important. Traditionally, strict regulations via the International Olive Council (IOC) govern the grading of olive oil as lampante (poor quality, unsuitable

2. This production expansion was stimulated by the increasing demand in phase (i) (Mili and Zuniga, 2001) and occurred both on the extensive margin with the emergence of new producing countries and locations and on the intensive margin with impressive productivity gains linked to the modernisation and restructuring of existing olive orchards. On the extensive margin, countries such as Argentina, Chile, China, Brazil, Australia, South Africa, and the United States have ramped up olive oil production (Türkecul et al., 2007). As a reflection of intensification investments, 30% of current olive acreage and 50% of the global production is intensively managed. Similar gains were reaped with improvements in olive oil processing (Mili, 2006). Despite continued demand expansion in new markets such as Australia, Japan, Brazil and Canada pushed by European Union promotion (Carri and Sassi, 2007), some analysts expect excess supply in the global olive oil market to continue into the future (Mili, 2006).

for consumption without further processing), ordinary, virgin, or extra virgin. In the emerging third phase of the international olive oil market, niche markets for high-quality extra virgin oil have become more and more differentiated based on flavour profiles, blends and traceable production conditions (for example, GIs, organic certification, etc.). Because of this high degree of differentiation, the range of unit values for olive oil is many times larger than that of other edible oils (Luchetti, 2000). While real prices for extra virgin olive oil (along with other food prices) have been quite volatile in recent years, the premium for extra virgin olive oil increased dramatically from 10% to 100% between 2009 and 2011 (Figure 2).

Figure 1: Annual olive oil production 1991-2011



Source: IOC (2011).

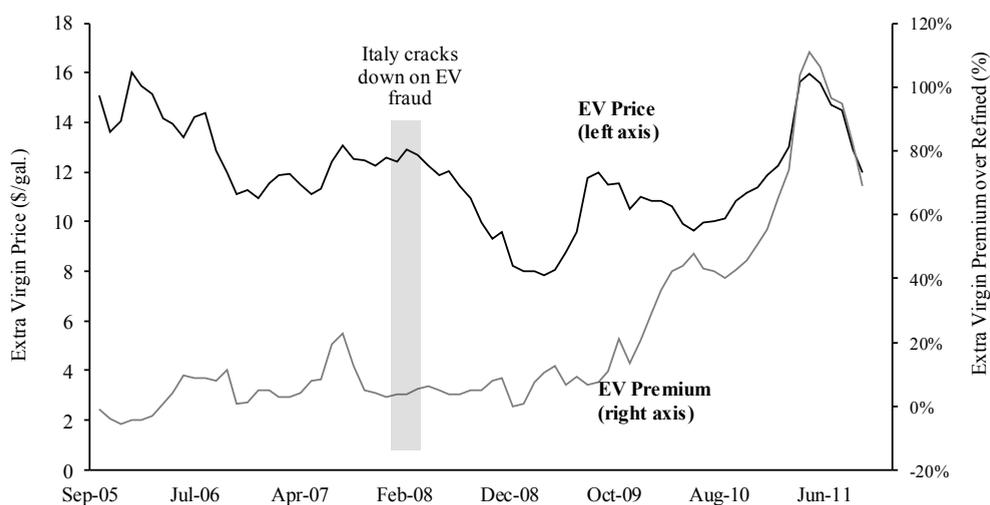
A final dimension of international olive oil markets merits attention. Olive oil's premium over other edible oils and the price differentiation among olive oils create incentives to mislabel and misrepresent olive oil – which is difficult for consumers to fully evaluate even after consuming it (Mueller, 2011).³ Recent tests indicate that imported 'extra virgin' olive oil sold at retail locations in California often does not meet international and USDA standards (Frankel et al., 2010). In March and April 2008, Italy launched an intense campaign to crack down on fraudulent olive oil practices that led to the arrest of dozens and the confiscation of thousands of litres of inferior oil being marketed as superior extra virgin oil.⁴ While this crackdown may ultimately restore some confidence in blended oils exported around the world from Spain and Italy, it also highlights the concerns that are fuelling the

3. Even in antiquity, olive oil was subject to fraud (Mueller, 2011; 2007). Adulteration and mislabelling allegations continue to be rampant.

4. While extra virgin olive oil prices dipped following this crackdown (see Figure 2), the premium of extra virgin over refined oil did not. It is unclear how the crackdown affected olive oil markets, if at all.

emerging third phase in international olive oil markets: the growth of high-value niche markets for olive oil that bypass the bulk oil market. In contrast to the bulk oil market that blends oils to achieve relatively homogenous and standardised flavours, these emerging high-value markets are less forgiving and require distinctive flavour profiles. Standards, traceability and organic certification will play an increasingly important role as this phase unfolds (see Mueller, 2011 for insightful discussion).

Figure 2: Evolution of real extra virgin (EV) olive oil prices and premium, Bari 2005-11



Source: Ibid.

3 Production and policies in Morocco, Tunisia and Syria

In this section, we underscore the importance of olive oil to the MENA region by considering three of the biggest producing, consuming and exporting countries in the region: Morocco, Tunisia and Syria. As suggested by Figure 1, Tunisia's share of world production has held steady (around 7%), while Morocco and Syria have steadily increased their production and share of total production (from 3% to about 6%). Table 1 provides additional comparison between the three countries. Tunisia stands out as being most olive-dependent with much larger exports. The share of extra virgin oil in total production is highest in Syria and lowest in Morocco. The rural poverty rate is highest in Morocco, but non-trivial in all three countries. Finally, across all three countries three-quarters or more of total olive orchard holdings are less than 5 hectares in area.

In the remainder of this section, we take each country in turn, describe the role of olive oil in greater detail and then explore the recent policy landscape with a special focus on policies that aim to promote olive oil as a means of reducing poverty and stimulating rural economic development. Although we focus primarily on domestic policies, we also highlight how the policies of other countries, including bilateral trade agreements and

foreign assistance, have an impact on the olive oil sector in ways that shape rural development.

Table 1: Selected statistics for Morocco, Syria and Tunisia

	Morocco	Syria	Tunisia
Population (millions, 2005)	31.5	19	10.1
Rural population (millions, 2005)	13	9.5	3.6
Rural poverty rate (2009)*	27.2%	14.1%	13.9%
Human Development Index Rank of 169 (2010)**	114	81	111
Total cultivated area (1,000 ha.) (2003)	9283	5421	4990
Area under olives (1,000 ha.) (2003)	580	407.3	1611.5
% of cultivated area under olives (2003)	6.2%	7.5%	32.3%
Olive workdays (million)	20	32	30
Olive workdays per capita (rural)	1.5	3.4	8.3
Exports (1,000 tons) (2010)	40	30	110
Olive holdings under 5 ha. (% of total)	74%	78%	84%
Extra virgin olive oil production (% of total, 2000)	2%	52%	30%

Source: IOC (2011) unless otherwise noted.

* Source: IFAD, <http://www.ruralpovertyportal.org>

** Source: UNDP, <http://hdr.undp.org/en/statistics/>

3.1 Morocco

Starting around the third century BC, the Phoenicians and then the Romans built a thriving city called Volubilis near modern-day Meknes. This settlement derived its economic importance from the region's agricultural products, the most important of which was olive oil. Thousands of years later, the importance of the olive has scarcely diminished. By adding over 10,000 hectares of olive trees each year for the past decade (IOC, 2011), Morocco has dramatically increased its production potential with more than 670,000 hectares of active olive orchards (*La VieEco*, 2009), which accounts for 6% of the present agricultural landscape. Although the olive sector constitutes about this same share of the value of aggregate agricultural production in Morocco, it is crucial to smallholders in much of the country and provides the equivalent of over 60,000 full-time jobs (IOC, 2011). Although Morocco currently produces a substantial 70,000 metric tons of olive oil

annually, most of it is inferior by international standards. In 2005, for example, 80% was graded as lampante, the poorest quality by international standards, and only 2% was extra virgin (ibid.).

Historically, many policies encouraged production with the objective of increasing the foreign-currency income from olive oil exports. Although these initial policies were not formulated primarily as rural development policy, they had an important influence on rural development. More recent policies have emphasised productivity improvement, quality investment and more importantly livelihood improvement of the smallholders with less than 5 ha. and who hold 74% of the total number of olive-growing holdings (ibid.). Today, Morocco hopes to stimulate an unprecedented expansion in olive production with the primary goal of developing the rural economy and reducing poverty. Indeed, the most prominent crop in the current rural agricultural development dialogue is the olive.

Moroccan producers were never guaranteed a fixed output price. In the 1980s, however, the government offered farmers very generous subsidies for investments in new plantings and expansion, including a subsidy of 100% on olive seedlings from 1986 to 1995, and launched research efforts into olive tree productivity (Ministry of Agriculture and Rural Development, 2004). Despite these efforts, the Moroccan olive sector has failed to improve its productivity much: only 12% of the potential yield is reached in rainfed olive groves and 26% in irrigated ones (Bamouh, 1998).

Dramatic changes in the international olive oil market during the 1990s led policy-makers in Morocco to reorient their strategy for the olive oil sector. In an attempt to tap the potential more fully vis à vis these emergent opportunities, the new strategy emphasised needed improvements in the productivity and economic efficiency of olive and olive oil production. This culminated in 1996 in the *Plan National Oléicole* (PNO), which aimed to increase the national olive orchard by 22,000 hectares per year and improve the quality of production through targeted subsidies and outreach to producers, rehabilitation of old orchards, investments in organisational and institutional innovations, and greater oversight of olive harvest and processing techniques. Although the PNO had a more modest impact than envisioned, between 1998 and 2008 Morocco added 170,000 hectares to its olive orchard (34% increase) and increased its olive oil production by 40% (*La VieEco*, 2009).⁵

5. Four dimensions of the PNO had direct implications for rural development. First, the plan continued to offer 80% subsidies on new olive seedlings purchased from national nurseries. Under this programme, roughly 3 million seedlings were planted in the first year of the PNO (1998-9), which expanded the area devoted to olive production by roughly 18,000 ha. Second, the PNO distributed free seedlings to farmers in marginal areas, a component that highlights clear poverty-alleviation objectives. In 2001, 3,000 ha of marginal lands were converted to olive orchards through this programme. Third, as an alternative to these subsidies on olive seedlings from national nurseries, the PNO offered to reimburse farmers for the creation of new orchards in rainfed zones (1,800 Dh/ha (\$211/ha)) and higher-density irrigated zones (2,600 Dh/ha (\$305/ha)). These reimbursements were intended to cover a broader set of investments beyond seedlings (for example, de-stoning, irrigation systems, etc.) and were a primary innovation of the PNO, but they have been used only sparingly. Roughly 1,000 ha of new olive orchards were added each year through these incentives. While we are not aware of any analysis of this tepid response from farmers, anecdotal evidence suggests a likely culprit: red tape, procedural hassles and long reimbursement delays. Finally, small-volume (<5T/day) olive milling equipment was distributed to approved co-operatives and producer associations which, in order to be approved, had to have access to at least 200 ha. of olive orchards. During the first four years of the PNO, 33 such mills were distributed.

By the mid-2000s, policy-makers had grown dissatisfied with the PNO. Opportunities in emerging high-value markets continued to elude Moroccan producers and processors, and the productivity of the sector continued to lag behind other olive-producing countries despite a decade of official support via the PNO. This fuelled a new round of policy efforts that sought to revolutionise Moroccan agriculture in general, with very specific hopes for olive and olive oil production, culminating in 2008 when the Ministry of Agriculture launched its broad and ambitious *Plan Maroc Vert* (PMV). The plan encompasses all of agriculture, but has important implications for the olive sector. The PMV distinguishes between ‘pillar 1’ producers with modern, integrated and intensive operations and ‘pillar 2’ farmers using traditional techniques with small plots and low capital intensity. It aims to support both pillars, in addition to aggregators who will help connect small-scale producers in pillar 2 to modern value chains. Specific to the olive sector, the PMV aims to increase spectacularly the value of olive production by 400% from 2005 to 2020, and focuses on both production and quality improvements. It further envisions stronger integration and specialisation within the olive value chain and more effective use of labels and branding to build traceability and reputation in order to tap into new high-value retail markets. Finally, the PMV explicitly aims to reduce poverty among pillar 2 farmers by rehabilitating old orchards and expanding olive orchards dramatically in marginal rainfed zones. With unbridled ambition, the PMV aspires to add a total of 350,000 hectares to pillar 2 olive orchards by 2020.

To fund these aspirations, the latest revision of Morocco’s *Fonds de Développement Agricole* makes a long-term commitment to support the objectives of the PMV. Besides increasing the subsidy rate for new seedlings to 100% for small producers (MAP, 2009), this initiative revises reimbursement amounts for PVO-type subsidies for new orchards (6,000 Dh/ha. (\$704/ha.) for irrigated land and 3,500 Dh/ha. (\$407/ha.) for rained land) and includes a new 30% subsidy for olive harvesting equipment. Financial support for the horizontal integration of the sector is manifest in investment subsidies that encourage projects that aggregate the production of pillar 2 farmers. Specifically, official subsidies for irrigation projects and other productivity investments are doubled when they target aggregation projects. Official support is also provided after production, with 10% subsidies offered to downstream investments made to promote or process agricultural products.

The flood of recent and renewed support for Morocco’s olive oil sector has also shaped bilateral development aid flows. In September 2008, the Millennium Challenge Corporation (MCC) of the US government launched a collaborative project with Morocco. The nearly \$700 million project over 5 years includes a substantial \$300 m. investment in fruit tree productivity. Rehabilitating olive orchards and planting new ones figures prominently in this part of the project. In all, the MCC project aims to rehabilitate 54,000 ha. of existing olive orchards and plant an additional 15,000 ha. of rainfed orchards and 9,000 ha. of irrigated orchards. To this end, MCC funding supports improvements in irrigation infrastructure (concrete lining of existing canals, storage basins, etc.), technical capacity-building, and the creation and training of farmer co-operatives. The substantial role of olive and olive oil production in this MCC project clearly showcases the popular perception of olive oil as a potential elixir of rural development and poverty alleviation.

3.2 Tunisia

A full third of the modern agricultural landscape in Tunisia is devoted to olive production. With 67 million olive trees grown over 1.7 million hectares, Tunisia ranks second in the world in area planted in olive trees (Office National de l'Huile, 2010). More than 10% of Tunisians and 20% of agricultural employment are involved in the olive and olive oil sector, which provides 35 million workdays annually (IOC, 2011). Olive oil exports account for half of total Tunisian agricultural exports and are the fourth provider of foreign currency (*All Africa*, 2009). In contrast to Morocco, which produces primarily low-grade olive oil, an estimated 30% of total production in 1999 qualified as extra virgin.

Historically, two general types of Tunisian olive oil policies stand out. First, many policies encouraged production with the objective of increasing olive oil exports as a source of foreign currency. Second, other policies subsidised the consumption of vegetable oils as a substitute for olive oil, again in order to increase exports. In recent decades, policies have emphasised market liberalisation and quality investments. Across this half-century of policy-making, few policies were formulated primarily as rural development policy, but they all shaped rural development quite directly because smallholders with less than 5 ha. account for 84% of the total number of olive-growing farms.

Many of Tunisia's olive oil policies were historically administered by the Office National de l'Huile (ONH), which was established in 1930 and reorganised in 1970 as part of a classic top-down approach to rural agricultural development aimed at ensuring rural incomes and livelihoods (Say et al., 2002). The ONH attempted to intervene in olive oil markets in order to integrate olive producers more directly and profitably with olive oil markets. In 1967, it temporarily banned the trading of fresh olives in order to increase the share of profit earned by olive growers. This ban was born out of concerns that intermediaries were preying on olive producers who were liquidity-constrained and flush with perishable olives after harvest, but ultimately it did little to change the distribution of profits across the olive oil supply chain. In an attempt to expand olive oil production, the ONH also provided price guarantees with early-season advances and technical assistance to rural producers, and facilitated their access to credit.

Direct state intervention in olive oil production faded in the mid-1980s when a variety of domestic and international pressures led to the Agricultural Structural Adjustment Program (1987-94). This national strategy included comprehensive reforms related to the production, processing and marketing of olive oil, a greater role for professional organisations and producer groups (Say et al., 2002), and a fund for the promotion of the olive oil sector.

The pace of liberalisation picked up in the 1990s with Tunisia signing into the General Agreement on Tariffs and Trade (1990), the World Trade Organisation (1994), and bilateral free trade agreements with the European Union (1996) and others. Although these agreements include provisions for agriculture that slow the liberalisation process in that sector, they nonetheless heralded a more competitive olive oil market both domestically and internationally. This general liberalisation trend accompanied by the spectacular changes in the olive oil market prompted a dramatic change in Tunisian olive oil policies that culminated in a 1998 national olive oil promotion strategy. In addition to promoting olive oil production and productivity, this strategy encompassed quality improvements, the promotion of domestic olive oil consumption, and the creation of new international markets

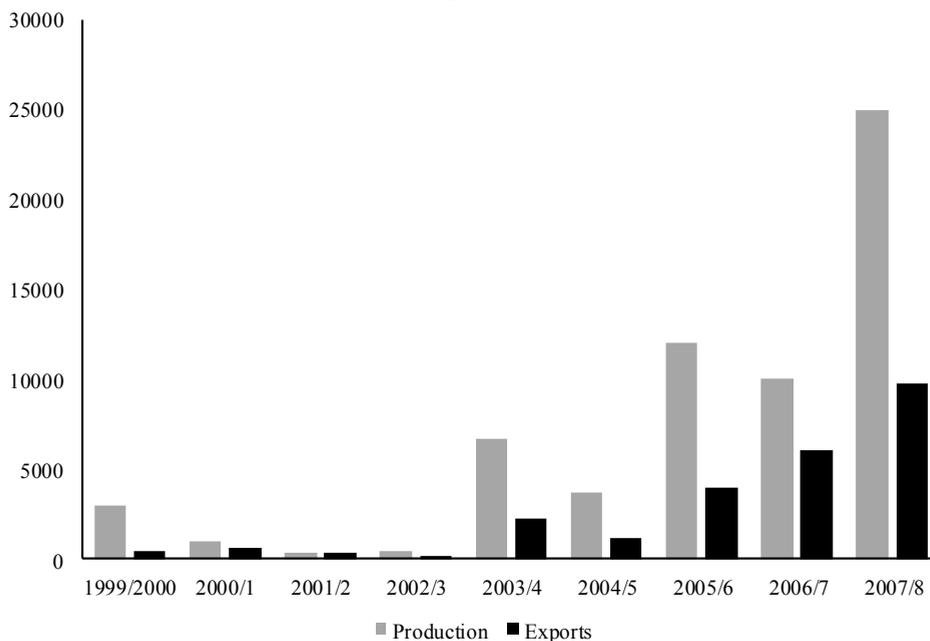
for Tunisian olive oil. To further position itself on international markets, Tunisia passed legislation in 1999 to implement Controlled Designations of Origin and Geographic Indications in order to protect the specificity of Tunisian olive oil and other products.

Policy efforts to link Tunisian olive oil producers with high-value markets continued to gain momentum in the 2000s. In 2004, major projects were launched to plant 30,000 ha. of irrigated high-density olive orchards, to improve the productivity of existing trees in favorable climates in northern Tunisia, and to rehabilitate old olive groves. In addition to these production-oriented efforts, several recent initiatives to stimulate Tunisian olive oil exports and promote improvements in quality and emerging high-value niche markets are worth noting.

In 2005, Tunisia launched several funding initiatives to support the expansion of existing export markets for Tunisian olive oil and the creation of new markets. These efforts – backed by the Tunisian government, the private sector and the World Bank – largely aimed to divert Tunisian exports from bulk oil bottled and relabelled in Italy and Spain to more direct retail exports under Tunisian labels, which account for only 4% of total exports currently. One such initiative, the FAMEX programme (*Projet de Promotion de l'Huile d'Olive Conditionnée Tunisienne*), promotes labelled Tunisian olive oil in the growing German, French, Japanese and American markets by retaining a market development representative in each country. This and other initiatives (for example, FOPRODEX, FOPROHOC) directly support market development by funding 70% (up to 10,000 Dinars (\$6,815)) of the costs of elaborating a marketing strategy in these countries and 50% (up to 100,000 Dinars (\$68,147)) of the costs of implementing the strategy. Through these programmes, the Tunisian government subsidises 30% of transportation costs (air and maritime) of exported olive oil.

As a complement to these efforts to promote Tunisian olive oil on increasingly stringent international markets, a host of other recent policies aim to improve and regulate olive oil quality (such as Decree 3726 of 2009). Many of these programmes specifically target rural producers, including smallholders, to improve production, harvesting and transportation practices. Institutions such as the ONH and *l'Institut de l'Olivier* (created in 1983) provide the liaison with farmers and serve an extension role in disseminating information about these practices, pest control, etc. An array of hefty subsidies aim to encourage farmers to invest in production and quality, including subsidies on fertilisers (20 to 25%), new olive trees (up to 50% for selected varieties), establishing new orchards (25%), equipment (20 to 25%), and irrigation investments (60%).

Finally, recent years have witnessed a dramatic expansion of organic olive oil produced in Tunisia, largely in response to policies that support new investments in this emerging niche market. While this is part of a general Tunisian strategy to promote organic agriculture that started in 1999, the organic olive oil sector receives specific support and generates excitement among many who see olive oil as perhaps the country's most promising organic export. In 2005-6, Tunisia produced 15,000 tons of organic olive oil, a third of which was exported (see Figure 3).

Figure 3: Tunisian organic olive oil production and exports (tons) 1999-2008

Source: Office National de l'Huile (2010).

3.3 Syria

With 617,000 ha. of olive orchards and 90 million olive trees, the olive is Syria's dominant fruit tree crop and constitutes 65% of the area devoted to fruit trees (MAAR, 2010). More than 400,000 families earn an income from the olive and olive oil sector, which provides more than 8 million workdays annually (IOC, 2011). At the national level, olive oil production contributed 9% to final agricultural production in 2000 (ibid.) and is the third most important commodity in terms of its contribution to GDP, after cotton and cereals. In contrast to Tunisia, the export sector is still growing and accounted for barely 5% of agricultural exports in 2004-6. More than 55% of the olive oil produced is extra virgin oil according to international standards, and most domestic brands are well-established (*Export*, 2010).

Agrarian policy in Syria has consistently emphasised the importance of olive oil. During the 1970s and 1980s, Agricultural Plans aimed for food self-sufficiency. As part of these plans, Syria has stimulated olive oil production through large-scale de-stoning and land-reclamation projects, including the National Fruit Tree Project starting in 1977, the Green Belt Project starting in 1980, and the Ali Al Ali Fruit Tree Planting Project starting in 1986 (IFAD, 2010). The last project used a loan from the German bank, Kreditanstalt für Wiederaufbau, to de-stone more than 300,000 ha. These initiatives have dramatically expanded olive production on the extensive margin and often among vulnerable populations (for example, Bedouins) on marginal land.

Starting in the mid-1980s, a gradual liberalisation programme was launched to move away from a centrally planned economy and to enhance the role of the private sector in agricultural production and marketing. While liberalisation has slowly shaped olive policies, the current Agricultural Plan (2009-10) retains the traditional objective of expanding olive production on marginal land and in mountainous and hilly areas where poverty rates are high. This aims to almost double annual olive oil production to 250,000 tons by 2020 through ongoing land-reclamation projects and 3 million trees entering the production phase annually (*DPNews*, 2010). In this push to expand olive production, state nurseries for local varieties of olives (for example, Sorani, Zaity and Doebli) play a central role by offering certified seedlings at prices 60% lower than those at private nurseries. These state nurseries distribute an average of 4 million seedlings each year. To encourage land conversion and reclamation, farmers are offered a lump-sum subsidy of 5000 SP (US\$105) per ha. of olive trees, and subsidised loans for other expenses, including crop insurance. The state finances many programmes to fight common olive pests (Ali, 2005), to develop new technologies and production methods (NAPC, 2006), to conduct olive research, and to disseminate information to farmers.

In the wake of liberalisation efforts, olive oil markets were among the last to liberalise: exports were allowed only beginning in 2002. Recent efforts to promote exports and the formation of the four primary Syrian exporters are mainly driven by growing production surpluses. These exporters ship oil in bulk to several large Italian and Spanish brokers under an EU trade agreement that allows 10,000 tons of tariff-free exports from Syria (NAPC, 2006). To a lesser extent, these exporters supply bottled oil to Arab and Gulf countries.

Syrian policy efforts to target high-value niche markets are very recent and limited to organic olive oil. A current project funded by the FAO and Italy aims to elaborate a proper institutional framework for organic farming in Syria and to promote organic opportunities among farmers (Kerusauskaitė, 2010). Organic certification should not require major production changes since fewer than 20% of Syria's olive trees are currently treated with chemical fertilisers and pesticides (Garcia-Alvarez-Coque et al., 2003). It will, however, require a level of co-ordination and verification that will be complicated by fragmented olive orchards.

4 To what effect? Likely poverty impacts of olive oil policies

In this section, we explore the likely impacts of the policies described above on rural poverty and development. It is clear that recent changes in olive oil markets have motivated new policies aimed at leveraging these markets to alleviate rural poverty, but are these policies really going to make a difference? Their impacts depend largely on heterogeneity among producers and differentiation across olive oil markets, which are critical to evaluating likely impacts because olive oil is not a commodity like other edible oils. Whereas policies to improve the welfare of commodity producers can focus on productivity and price stabilisation, policies that aim to do the same among heterogeneous producers of a highly differentiated product must take several market and marketing considerations into account.

To frame our discussion along these lines, Figure 4 provides a heuristic depiction of a prototypical olive oil supply chain in the MENA region, in which olive oil flows rightward

from producers to markets and information flows leftward from markets to producers. In dynamic and competitive markets, the flow of information is as important as the flow of olive oil; without reliable feedback from markets, producers often fail to respond to new market opportunities and conditions. As depicted on the ‘Producer Heterogeneity’ side of the figure, most MENA olive producers follow traditional practices – and the large majority of these traditional producers are small and marginal farmers with only a few hectares in olive production. A growing minority of producers in Morocco and Tunisia follow modern practices, including high-density planting, mechanised harvesting and integrated processing facilities. Differentiated markets emerge importantly from this producer heterogeneity. The four differentiated market segments, depicted on the left side of Figure 4, exist throughout much of the MENA region, albeit in different forms. For each of these market segments we offer a brief description and a range of prices based on recent price and cost data from Tunisia.⁶

Most small and marginal growers mill their olives in traditional local mills. They keep much of the production for their own consumption and, if they need cash, sometimes sell a portion directly to the mill. In Tunisia, the mill-gate prices offered to small producers for these quick sales are low – in part because the oil is of inferior lampant grade – but nonetheless high enough to cover production costs of roughly \$0.80/kg. But this is far short of the potential value that could be extracted from the olives they grow, which easily qualify as organic and are manually harvested and could command a premium if they could be transported and processed more quickly and more carefully.

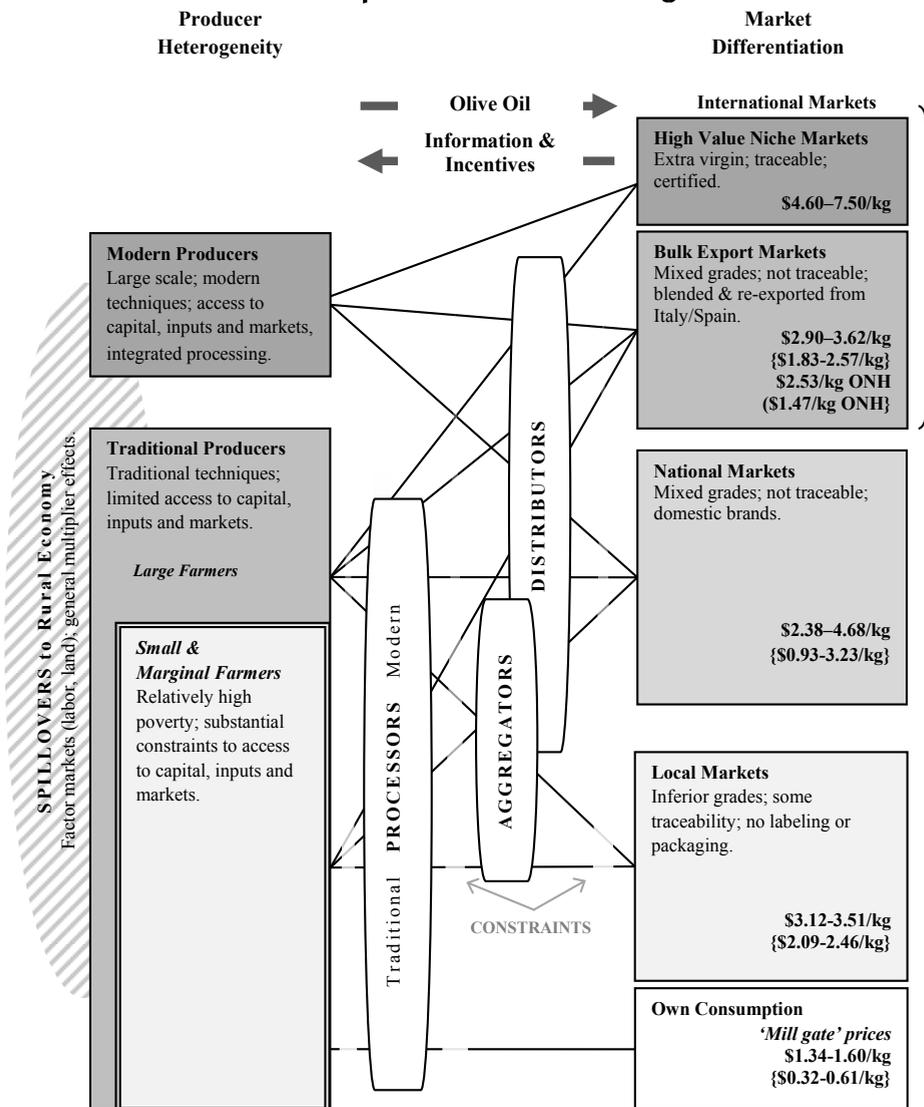
While some producers will sell a portion of their oil on local markets often in unlabelled and re-used bottles for higher profits, others produce too little oil or face other barriers to entering this local market. In order to tap broader or national olive oil markets, small and medium producers typically rely on aggregators and distributors. Large traditional producers similarly rely on processors and distributors, but generally produce enough to not have to rely on aggregators. Much of the national (domestic) market is supplied by these producers. Two distinct international markets are potentially relevant for MENA producers. First, the bulk export market offers an important market. This market is often routed through Italy or Spain or, in the case of Tunisia, through the ONH. While prices and profits are not necessarily higher in this market than in domestic markets, the segment can absorb large volumes of excess oil. Second, high-value niche markets offer the highest profitability to producers – nearly double that of the other segments in Tunisia – but they also demand high standards, traceability and often certification.

The relative importance of flows between producers and markets is depicted in Figure 4 by the thickness of the linkages. Potential linkages, often the target of the recent olive oil policies discussed above, are depicted as dashed lines. Supply-chain constraints, which are more severe for small and marginal farmers than for large and modern producers, impede these linkages and appear as linkage gaps. Olive oil policies can alleviate rural poverty through direct benefits to traditional producers by increasing the value of existing market linkages and creating valuable new ones. We evaluate these direct poverty impacts for the

6. The different prices were compiled from the Tunisian market and from the International Olive Oil Council web site. The cost data are from the proceedings of the National Study for Tunisia about the production, marketing and processing of olive oil, prepared by El Mongi Msallem, El Bachir Sai, Mohsen Khalif and Ennasar Khair Eddine. Since the unit profit estimates are based on a constant cost structure (i.e., they do not change across market segments), the estimates are admittedly imprecise.

Moroccan, Tunisian and Syrian policies described above by discussing productivity, quality and market linkage constraints and considerations. These policies can also have an indirect impact on the rural poor through spillovers to the rural economy, including impacts on local markets for labour and land and multiplier effects associated with the direct benefits reaped by producers. We conclude this section with a discussion of the possible rural poverty impacts associated with these spillovers.

Figure 4: Heuristic framework for assessing the rural poverty impacts of olive oil policies in the MENA region



Note: Recent price ranges in Tunisia for each market segment shown in bold. The corresponding estimates of net unit profits received by producers shown in { }.

4.1 Productivity constraints and considerations

Expanding olive oil production by relaxing some of the constraints traditional producers face is a common policy objective across all three countries. Both Morocco and Syria have adopted extremely ambitious plans for increasing their olive production. In the next decade, Syria aims to increase its annual olive oil production by 100,000 metric tons, while Morocco plans to almost double its olive orchards to 1.2 million hectares. Generous subsidies on new olive seedlings (60-80%) and on the conversion of land to olive orchards encourage this expansion on the extensive margin. With a third of its agricultural land already in olive production, Tunisia is less focused on the extensive margin, but policies in all three countries specifically encourage small and marginal farmers to expand and rehabilitate olive orchards on marginal lands.

While current policies include some incentives to expand production on the intensive margin as well (for example, fertiliser subsidies in Tunisia), they may not address some of the constraints of small and marginal farmers. For example, problems of incorrect pruning or pest management seem to persist despite efforts to change these practices through traditional extension (Lachaal et al., 2005), suggesting that long-standing concerns about the inefficacy of agricultural extension may continue to constrain improvements, particularly among small and marginal farmers. Similarly, the lack of relevant agronomic information may continue to constrain productivity as current policies provide relatively little support for olive productivity research. In Syria, this constraint has a specific manifestation. Only 11 of 75 olive varieties are characterised, which has a negative impact primarily on small farmers who grow (uncharacterised) local varieties (Brillante et al., 2006). While a bilateral project with Italy aims to characterise some of these local varieties, more support of this kind is needed, especially in tandem with improvements in extension and outreach.

Land fragmentation and tenurial arrangements can also constrain producer responses on both the extensive and intensive margins. In Syria, previous land-reform efforts make it difficult for growers to achieve economies of scale, which can hamper investment and limit market incentives. Absentee landowners are common in Tunisia, and many Tunisian olive orchards are consequently managed by a hired farmer or sharecropper. We are not aware of any rigorous efficiency tests of these sharecropping arrangements, but empirical work in other settings suggests that they may impose allocative inefficiencies on the Tunisian olive sector in general and on orchards managed by small and marginal farmers in particular.

4.2 Quality constraints and considerations

Across all three countries – and indeed throughout the MENA region – olive policies have increasingly aimed to improve olive oil quality. Morocco, for example, plans to more than double its total oil production in the next decade while it quadruples the value of this production. For small and marginal producers, severe quality constraints emerge during harvesting and milling. Current policies target these key production stages, but several limitations remain.

Harvesting practices and constraints among traditional producers often lead to damaged fruit, sub-optimal harvest timing, long delays before milling, and, consequently,

inferior oil quality. Manual harvesting is labour-intensive and therefore subject to constraints in labour availability because of migration (Brillante et al., 2006). Syrian farmers rely heavily on girls to provide this critical harvest labour. Both Morocco and Tunisia offer subsidies on harvesting equipment and on loans to finance these investments for small farmers, but these interventions seem to be ineffective among most traditional producers owing to other factors. In addition to the alternate-bearing characteristic of olive trees (i.e., high production followed by low production), these producers grow traditional varieties with low yield and see wide production swings because of limited or no access to irrigation, which hampers investments in harvesting equipment. Nevertheless, many inferior harvesting practices persist, including the mixing of olives with different ripeness, damage or contamination (Issa et al., 2006), even though improvements do not require any investment in equipment, which highlights the need for more effective technical training and outreach. Given the present structure of the Tunisian supply chain, small producers have few options for managing price risk, and fluctuations in olive oil prices during the harvest period often induce them to delay harvest, which lowers oil quality.

Small farmers often have access only to traditional oil mills, which can further reduce oil quality. Although some policies have supported the diffusion of more up-to-date mills, genuinely upgrading the processing sector has clearly been a much lower policy priority than expanding production. Small traditional producers face high transaction costs and severe delays in getting their olives to mills owing to distance and the transportation infrastructure. In addition to weakening their bargaining power with intermediaries, this can dramatically reduce oil quality. In Syria, the average waiting time before milling ranges from one to five days, but can extend to 10 to 15 days during high production years (Brillante et al., 2006) – delays that are usually aggravated by the lack of appropriate storage capacity at the farm level. Finally, while there are many ways for oil quality to deteriorate between the tree and the mill, there is virtually no capacity to detect oil defects. In Tunisia, the ONH operates three laboratories for analysing olive oil quality; in Spain, there is a central laboratory for every ten mills (Richard, 2006). Laboratory facilities in Morocco and Syria are even sparser.

4.3 Market linkage constraints and considerations

The marketing and distribution of olive oil is heavily shaped by additional constraints in market linkages and in the flow of information back to producers and processors. For Morocco, Syria and Tunisia, these include the lack of domestic suppliers of high-quality bottles and, more broadly, limited traceability, owing to weak market linkages and infrastructure. All three countries have instituted policies to improve the distinctiveness of their olive oil through marketing and branding campaigns. Morocco offers some modest subsidies for the promotion of its agricultural products. Tunisia more proactively invests in a network of olive oil marketing agents in important emerging markets and subsidises the formulation of marketing plans for these new markets as well as freight charges to deliver Tunisian olive oil to these markets. For over a decade, Tunisia has also pushed for the legal protection of GIs and Protected Designations of Origin applied to its olive oil and recently launched a major effort to certify and market its oil as organic (Figure 3). Syria is testing this route as well and has established Sorani as a GI. These geographical branding techniques may enable traditional producers to bypass the bulk oil market and tap high-

value niche markets directly, but this is largely uncharted territory and the returns to these efforts are uncertain at this point.

For small farmers, the strength of market linkages is determined importantly by the efficacy of aggregators, distributors and exporters. While olive oil policies in Morocco, Tunisia and, to a lesser extent, Syria reflect this critical role with direct support for intermediaries, there remain several impediments in practice. Exporters face higher and higher quality demands from their clients, but have difficulty in enforcing production and processing standards among thousands of heterogeneous and fragmented traditional producers. Tapping high-value markets for organic olive oil requires verification and certification that will demand greater producer co-ordination as well. Morocco's ambitious PMV and the recent MCC contract creatively target aggregation and co-operative projects, but many players in the sector privately express doubts about how and how well this will work to improve market linkages for small and marginal producers based on the limited success of similar initiatives in the past. While Tunisia's Agrocobinat has successfully integrated growers in a co-operative that encourages innovation and improves olive quality (Karray, 2006), this initiative is difficult to scale-up as it involves subleases offered exclusively to retired agricultural technicians.

Perhaps the greatest concern about these aggregation and co-operative initiatives is the difficulty in transmitting market information back to small producers: when this information flow is constrained or impeded, as are any incentives for small producers to alter production practices in response to market opportunities. These information constraints stem from many other sources beyond aggregators and co-operatives and can severely hinder traditional producers' opportunities to tap high-value niche markets, which are much more demanding than bulk export or national olive oil markets. The flavour profiles that domestic consumers value are often quite different from – even inconsistent with – international standards: many Moroccans prefer flavours that international taste panels identify as inferior (for example, rancid). Information constraints apply equally to the design and implementation of olive oil policies and can thereby hinder their efficacy. Seedling subsidies may in principle apply to all olive varieties, but the implementation of these subsidies may unduly skew varietal choice, with important unintended consequences for high-value market opportunities. For example, the implementation of Morocco's seedling subsidy scheme effectively requires traditional producers (especially small ones) to purchase seedlings from the state nursery system, which produces primarily a variety called the *Picholine Marocain*. Consequently, this variety constitutes the vast majority of the almost 200,000 ha. of new olive plantings in Morocco since 1998, despite the fact that other varieties that are well adapted to the local growing conditions are more highly valued on international markets. Unfortunately, few of the olive oil policies that aim to alleviate rural poverty seek to improve the transmission of market information and incentives.

International standards are often essential to market linkages in the olive oil sector. Standards set by the International Olive Oil Council (IOOC) and Codex Committee on Fats and Oils of the Codex Alimentarius Commission (FAO and WHO) can enable producers to tap high-value international markets through the use of common quality-grade standards. While these standards can reduce fraud and increase the returns to quality investments, they may also create barriers to trade if they do not reflect the natural variability in olive oil composition as its production on international markets spreads to new regions. For instance,

Syria, a relative newcomer to olive oil exports, insists that much of its oil is wrongly denied classification as virgin because of natural variation in its composition (Sabetta et al., 2006).

4.4 Indirect impacts through spillovers to the rural economies

In addition to direct benefits that might accrue to traditional olive oil producers in the MENA region, the policies that see olive oil as an elixir for rural development might have indirect impacts on the rural economy through a host of spillovers. These spillovers could come in response to direct benefits reaped by traditional producers and, ultimately, by new modern producers. Factor market interlinkages provide an important pathway for these spillover impacts. The dramatic expansion of olive production, much of it among traditional producers, has major impacts on rural labour and land markets. Since this expansion has included both conversion of existing agricultural land and extension to marginal land, these impacts involve more than just reallocating rural labour among agricultural tasks. Limited mechanical harvesting among many small-scale producers implies extremely high labour demand during the critical harvest and processing periods, which should continue to increase rural wages and thereby benefit rural workers. While households with limited or no access to their own land may benefit importantly from this spillover, this same interlinkage via factor markets may also create spillovers between small and large traditional producers and even modern producers (Dyer et al., 2006). We note, however, that rural factor markets throughout the MENA region are often constrained in these adjustments, which will moderate these spillovers.

Beyond these factor markets, olive oil policies – particularly the ambitious recent policies – are likely to have additional spillovers in the rural economy via standard multiplier effects: if traditional producers profit as a result of the policies, this increased profit will stimulate economic activity more generally. More broadly, Tunisia has successfully used its olive sector for several decades to generate foreign-currency inflows. While macroeconomic objectives such as this are not as fashionable as they once were, the olive sector in MENA countries will no doubt continue to provide broader spillovers to both the rural and national economies.

5 Conclusion

As part of a global expansion of olive oil markets, many countries in the traditional olive oil cradle increasingly see olive oil as a potential elixir for rural economic development and poverty alleviation. We have demonstrated this tendency in the case of Morocco, Syria and Tunisia. While increasing olive and olive oil production remains a central goal of agricultural policies in these countries, increasing the value of this production through higher quality and better market linkages is a common secondary feature of contemporary olive oil policies. We have explored how producer heterogeneity and market differentiation crucially shape the impact these policies are likely to have on rural poverty and economic development. While expansion of olive production could increase rural household incomes, standard policies to expand production are clearly insufficient for linking producers to higher-value markets. In an era of competition among high-value olive oil producers and stringent differentiation, innovations are required throughout the supply chain, including processing, marketing, and institutional design. Traditional marketing strategies that feed

into undifferentiated supply chains with little or no traceability may bring some local improvements in rural welfare, but far greater opportunities would remain untapped if countries in the region fail to break out of production-centric policies. In this section, we conclude with discussion of a few principles and insights that could improve the poverty and development impacts of olive oil policies in the MENA region.

First, policies will only effectively integrate traditional producers into modern olive oil markets if they reflect the many production and livelihood constraints they face. Contemporary value chains in agri-food markets show little tolerance for weak links that are inconsistent or inefficient. Olive oil policies cannot remedy all the constraints that make it difficult for traditional producers to integrate into modern value chains, but they should be designed and refined with careful consideration of these constraints.

Second, olive oil policies must be informed by the demands of international markets. This is particularly true if producers want to develop new markets that do not rely on the existing bulk oil chain. The demands of these high-value markets will require not only quality improvements but better traceability and certification. These markets demand more information about product and production attributes than is provided by the murky bulk and blended oil market that is routed through Italy.

Third, olive oil policies have done too little to facilitate the transmission of market information and incentives they target back to the producers they aim to benefit. As a result, production decisions at the farm level are often inconsistent with the demands of international and even national markets. Traditional producers could make much better investment decisions if they knew what consumers valued in olive oil, and faced incentives accordingly. While improving the flow of information and incentives is complicated, it deserves much greater emphasis in the policies that aim to link traditional producers to high-value markets. Moving away from bulk oil exports and towards high-value niche markets will place even greater information demands on the olive oil supply chain.

Fourth, small and marginal producers in the MENA region are not likely to begin supplying oil to high-value niche markets any time soon. Instead, they may supply more oil to the national markets as larger traditional and modern producers shift their focus to (potentially) more lucrative international markets. It is important to recognise, however, that even shifting from own consumption and local markets to national markets requires improvements in production, harvesting and processing, as well as a degree of efficient aggregation that is beyond current capacity.

Finally, it is important to consider how the global market for olive oil will evolve in the coming decades. Extra virgin olive oil prices have fallen steadily in the past decade and have become quite volatile in recent years. While global consumption is likely to increase for many years to come, so is global production. The same ambition that is apparent in Morocco, Tunisia and Syria is evident in dozens of other countries around the world. This broad expansion in olive and olive oil production promises to bring dramatic changes to the global olive oil market in the future. These may imply continued price volatility, which would introduce price risk as an important consideration for policy-makers hoping to reduce rural poverty by integrating producers into olive oil value chains. For small and marginal producers who may struggle to tap into international markets, it is important to

note that increases in olive oil consumption in local and national markets are likely to be much less pronounced than in international markets.

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